

USSR

UIC: 001.371.301

GUSEV, A. V., BOZHUKOV, B. V.

"An Integrated Linear Transmission Circuit"

V sb. Poluprovodn. priboi i tekhn. elektroniki (Semiconductor devices in Electrical Communications Technology--collection of works), Vyp. 6, Moscow, "Svyaz", 1970, pp 116-132 (From RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7155)

Translation: A method is proposed for static calculation of a linear transmission circuit made in the form of an integrated silicon chip. The circuit is a time selector which reproduces the input signal at the output with minimum distortion for a certain time interval determined by the duration of the applied selector signal. Transition processes in the circuit are considered. Conditions for improving the temperature stability and linearity of the transmission factor are determined as well as the speed of the circuit. Five illustrations, bibliography of eight titles. N. S.

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USSR

UDC 532.517.4

LAGUNOV, A. S., BAYVEL, L. P., GUSEV, B. A., and LITVINOV, V. K.,
V. I. Lenin Khar'kov Polytechnical Institute

"Dimensional Distribution of Drops as a Function of Their Residence
Time in Turbulent Flow and the Flow Velocity"

Moscow, Doklady Akademii nauk SSSR, vol 207, No 4, 1972, pp 808-810

Abstract: Some results are given in this experimental paper investigating the fractioning process of a liquid by a gas stream. The gas flows in a Venturi and is incident on the liquid through an aerodynamic sprayer. The process occurs in two stages. In the first, the fractioning is done at high relative velocities of liquid and gas; in the second, it is caused by turbulent flow pulsations. The dimensional spectrum of the drops was determined at a comparatively large distance from the intersection point of the liquid and the gas. The experimental equipment was developed by the authors on the basis of the work of K. S. Shifrin, and the experiments described were suggested by A. N. Kolmogorov to clarify the dependence of the dimensional distribution on the residence time in turbulent flow. A diagram of the equipment is given, and
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USSR

LAGUNOV, A. S., et al, Doklady Akademii nauk SSSR, vol 207, No 4,
1972, pp 808-810

curves of the drop dimension spectra plotted for various values of
the gas show that the dimensions depend strongly on the residence
time.

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- 31 -

USSR

UDC 539.3:534.1

BAZHANOV, B. G., GUSEV, B. M.

"Experimental Study of the Stability of Cylindrical Large-Diameter Shells in Axial Compression"

4-ya Vses. Konf. po Probl. Ustoychivosti v Stroit. Mekh., Tezisy Dokl. [Fourth All-Union Conference on Problems of Stability in Structural Mechanics, Abstracts of Reports], Moscow, 1972, pp 188-189, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 V383).

Translation: Results are presented from an experimental study of stability beyond the elasticity limit in axial compression of steel welded cylindrical shells 600 mm in diameter with a range of ratios of radius to wall thickness of 25 to 200. The shells were manufactured by rolling from sheets with subsequent welding using the technology used at plants in the chemical and petroleum machine building industry. The ends of the shells were welded to flanges, through which the load was applied using a 1,000 ton hydraulic press.

The central application of the load was checked during the tests, normal stresses were measured in the walls of the shells in the axial direction and the decrease in distance between the ends was measured, and a diagram of load

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USSR

UDC 538.3:234.1

BAZHANOV, B. G., GUSEV, B. M., 4-ya Vses. Konf. po Probl. Ustoychivosti v Stroit. Mekh., Tezisy Dokl., Moscow, 1972, pp 188-189.

vs. shortening of shell was continually recorded. Two shells had a circular seam in addition to the longitudinal welded seam in order to study its influence on the load-bearing ability of the shells.

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- 133 -

USSR

UDC 539.32.001.24:669.14

GUSEV, B. M., and OBUKHOV, A. S., Candidates of Technical Sciences

"Selection of Calculated Values of Modulus of Elasticity of Steels at High Temperatures"

Moscow, Khimicheskoye i Neftyanoye Mashinostroyeniye, No 11, Nov 70, pp 14-15

Abstract: An analysis performed by the authors shows that all steels can be divided into two groups as concerns the nature of the dependence of the modulus of elasticity as a structurally insensitive characteristic on temperature: carbon and alloyed steels. The same at room temperatures, the moduli of elasticity of the two steels diverge at higher temperatures, that of alloyed steels being greater than that of carbon steels. Based on statistical analysis of experimental works, the dependence of modulus of elasticity on temperature is presented graphically for each of the two types of steels.

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- 46 -

Industrial

USSR

UDC 539.214;539.274

GUSEV, B. N.

"Application of a Statistical Method to Study the Bearing Capacity of a Cylindrical Shell Loaded by an External Pressure"

Tr. Vses. n.-i. i konstrukt. in-t khim. mashinostr. (Works of the All-Union Scientific Research and Design Institute of Chemical Machine Building), 1972, No. 56, pp 25-30 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V452)

Translation: The effect of initial perturbations of a random nature on lowering the bearing capacity of cylindrical shells of unlimited length loaded with an external pressure is investigated. A statistical method is used to establish a relationship between the probability of exhaustion of the bearing capacity and the variability of the initial perturbations (ovalness of the transverse cross section, spread of the values of the mechanical characteristics, etc.). The safety factor and the dispersion of the yield point of the material are calculated. 5 ref. Author's abstract.

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USSR

UDC 576.861.1

PAYZULINA, S. I., KHANDUYEV, Ts. Ts., IMANOV, E. D., CHISSEV, B. N., and MAKAROVA, Ye. V., Institute of Biochemistry and Physiology, Academy of Sciences Kirgiz SSR

"Dynamics of Development of Negative Colonies of the Virus of Contagious Ecthyma (Sheep Pox) in Cell Cultures"

Frunze, Izvestiya Akademii Nauk Kirgizskoy SSR, No 1, Jan/Feb 72, p 51

Abstract: Upon infection with the virus of contagious ecthyma or sheep pox (culture strains A and K), monolayer cell cultures of the skin and kidney of sheep embryos, and the kidney epithelium of adult sheep grown on Hanks medium were treated with an agar solution, so that an agar coating formed and negative colonies (plaques) were observed in tissue cultures. The plaques had a round shape. After staining with methylene blue, degenerated and enlarged intensively stained cells were observed along the edges of the plaques, while in the central section of the plaques, only stained debris of destroyed cells were detected. In cultures of skin and kidney cells of sheep embryos, macroscopically visible plaques appeared on the 4th to 5th day of incubation. The maximum number of plaques not exceeding 1 mm in diameter had formed up to that time. Subsequently, the number of plaques increased at an insignificant 1/2

USSR

FAYZULINA, S. I., et al., Izvestiya Akademii Nauk Kirgizskoy SSR, No 1, Jan-Feb 72, p 51

rate, reaching an upper limit on the 9-10th day of cultivation. In cultures of adult sheep kidney cells, the maximum number of plaques (60-70%) had formed on the 5-7th day. Their diameter was ≤ 1 mm at that time. The number of plaques reached an upper limit on the 10-12th day. Their maximum diameter was 4-5 mm on the 10th day of cultivation.

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- 93 -

1/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--WATER TREATMENT BY A MAGNETIC FIELD IN THERMAL POWER ENGINEERING
-U-

AUTHOR--(02)--TEBENIKHIN, YE.F., GUSEV, B.T.

COUNTRY OF INFO--USSR

SOURCE--WATER TREATMENT BY A MAGNETIC FIELD IN THERMAL POWER ENGINEERING
(OBRABOTKA VODY MAGNITNYM POLEM V TEPLONERGETIKE) MOSCOW, ENERGIYA,
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, ENERGY CONVERSION
(NON-PROPULSIVE)

TOPIC TAGS--MONOGRAPH, WATER PURIFICATION, WATER PURIFICATION EQUIPMENT,
THERMOELECTRIC POWER, MAGNETIC METHOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3009/0308

STEP NO--UR/0000/70/000/000/0001/0144

CIRC ACCESSION NO--AM0139130

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AM0139130

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 3.
INTRODUCTION 5. CHAPTER I CERTAIN THEORETICAL CONCEPTS ON THE
MECHANISM OF ACTION OF THE MAGNETIC FIELD IN WATER TREATMENT 10. II
CONDITIONS IN THE USE OF A MAGNETIC FIELD FOR WATER TREATMENT 43. III
REMOVAL OF SLIME IN MAGNETIC TREATMENT OF WATER 68. IV INDUSTRIAL
CONTROL OF MAGNETIC TREATMENT OF WATER 79. V APPARATUS FOR MAGNETIC
TREATMENT OF WATER 91. VI METHODS IN CALCULATION OF APPARATUS FOR
MAGNETIC TREATMENT OF WATER 117. VII FUTURE USES OF MAGNETIC
TREATMENT OF WATER IN THERMAL POWER ENGINEERING 129. BIBLIOGRAPHY
142. THE BOOK DEALS WITH CERTAIN THEORETICAL AND TECHNOLOGICAL
PROBLEMS IN WATER TREATMENT BY A MAGNETIC FIELD FOR PREVENTION OF BOILER
SCALE. THE BOOK CONTAINS A BIBLIOGRAPHIC REVIEW, RESULTS OF
EXPERIMENTAL INVESTIGATIONS OF THE AUTHORS AND DATA ON THE USE OF
MAGNETIC APPARATUS. IT WAS WRITTEN FOR A WIDE CIRCLE OF ENGINEERING
TECHNICAL PERSONNEL AND SCIENTISTS IN THE FIELD OF WATER TREATMENT, AS
WELL AS STUDENTS AND POST GRADUATE STUDENTS.

UNCLASSIFIED

Acc. Nr:

AP0047190

Ref. Code: UR 0511

PRIMARY SOURCE: Stomatologiya, 1970, Vol 49, Nr 1, pp 86-87

B. Ya. Gorovoy, G. A. Milovanov, Yu. P. Gusev, E. P. Gusev — THE EMPLOYMENT OF DENTOXIDE FOR REINFORCEMENT OF NONREMOVABLE PROSTHESES

Summary. For the reinforcement of nonremovable prostheses the authors employed a preparation from the group of self-setting epoxy resins — dentoxide — endowed with good adhesion, absence of toxicity for the dental pulp and not dissolving in the oral cavity. Dentoxide was used in accordance with the instruction. Observations over 124 patients showed good fixation of bridge prostheses.

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USSR

GUSEV, B. V., ZAZIMKO, V. G., ZAYATS, Yu. L., OSIPOV, B. A.

"Graphic Analysis in the Study of Mathematical Models"

Graficheskiy Analiz pri Issledovanii Matematicheskikh Modeley [English Version Above], Dnepropetrovsk, 1972, 8 pages (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V710 DEP, by the authors).

Translation: Graphic analysis of mathematical models of technological processes is applied. It is demonstrated using two examples, determination of the optimal parameters of vibration and composition of concrete.

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USSR

UDC 591.1.15

LYAPIN, YR. N., GUSEV, D. I., KATKOV, A. YE., PODGURSKIY, A. K., and NECHAYEV, L. I.

"The Dependence of the Accumulation of Radionuclides in the Tissues of Fish on Temperature and Saline Conditions in the Environment"

Tr. Atlantich. NII ryb. kh-va i okeanogr. (Transactions of the Atlantic Scientific Research Institute of Fisheries and Oceanography), No 44, 1973, pp 45-59 (from RZh-Biologicheskaya khimiya, No 11, 10 Jun 73, Abstract No 11 F1418)

Translation: The work presents the findings of an experimental study of the accumulation of cesium-137, strontium-90, cerium-144, antimony-125, chromium-51, iron-59, cobalt-60 and ruthenium-106 in the tissues of fish (golden carp, lake ruff, rainbow trout) at a temperature of 0° and 17° in fresh water (mineralization up to 100 milligrams per liter) and in artificial sea water prepared according to the Bruyevich method using salts of super chemical purity.

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- 59 -

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udc 591.1.15

KATKOV, A. YE., LYAPIN, YE. N., GUSEV, D. I., and MECHAYEV, L. N.

"Kinetics of Polonium-210 in the Tissues of Fish at 0⁰ C and in Water of Different Salinity"

Tr. Atlantich. NII ryb. kh-va i okeanogr. (Transactions of the Atlantic Scientific Research Institute of Fisheries and Oceanography), No 44, 1971, pp 60-65 (from RZh-Biologicheskaya khimiya, No 11, jun 73, Abstract No 11 F1419

Translation: The kinetics of the accumulation and the character of metabolism of polonium-210 were investigated in tissues in simulated winter conditions of habitation in water of different salinity.

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- 60 -

USSR

UDC 666.1101.621.378.324

SHATILOV, A. V., GUSEV, G. P., and DVORNIKOV, G. D.

"Self-Focusing Thresholds of Nanosecond-Long Radiation in Optical Glass"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 4, Apr 72, pp 18-20

Abstract: Experimental threshold self-focusing capacities are compared, for 19 kinds of Soviet-produced optical glass, to theoretical threshold values computed on the basis of a model of striction self-focusing, for a radiation duration of 10^{-7} -- 10^{-8} seconds. In the measurement procedure, the relationship of the self-focusing threshold to the size of the irradiated area is taken into account. For highly homogeneous types of glass the experimental results coincide with the values of the model, but cases are possible in which account must be taken of absorption. The principles dealt with do not extend to the case of durations of greater length. One table, 11 references.

GUSEV, G. P.

Space Physiology

COLEEN

SO: JPRS 53801
12 AUG 71

UDC 616-008.92-07:616.632-074

CORRELATION BETWEEN RENAL EXCRETION OF DIFFERENT CATIONS UNDER
CONDITIONS OF AN IMPAIRED MINERAL BALANCE

Article by L. S. Lashinova, D. A. Yarovaya, N. K. Kiselev, G. P. Gusev, Ye. A. Lavrova, and Yu. V. Natchokin; Moscow, Kosmicheskaya Biologiya i Meditsina, Russkaya Vol 5, No 3, 1971, pp 74-77, submitted 4 April 1970
1600225

The problem of maintaining water-mineral equilibrium is of great importance for medical support of space flights. It has been demonstrated that weight loss by cosmonauts is caused by excess elimination of water and minerals during flight (Yu. V. Natchokin, et al.; Ye. I. Vorob'yev, et al.; S. A. Gornov, N. I. Prolov). In the modeling of physiological conditions prevailing during weightlessness, in some cases was loss of water and ions, especially sodium and calcium (David; Bowers, et al.; Cockate, et al.). The renal elimination of minerals can be caused by volume regulation as a result of blood redistribution (O. Gauer, J. Henry) and intensified calcium secretion setting in during hypodynamic (W. Neuman, S. A. Gornov and N. I. Prolov). It is known that in some physiological states there is a parallelism in sodium and calcium excretion by the kidneys; this has given basis for some researchers to postulate that the transport of these cations is closely linked (Giordano, et al.; Waisert; Wasson).

In order to make a more thorough analysis of changes in the electrolyte balance during spaceflight it was of interest in investigations with human subjects to clarify the interrelationship between renal elimination of sodium and calcium in a broad range of changes in the state of water-mineral metabolism caused by prolonged exposure to a high temperature and restricted mobility.

Method

The investigation was made on 11 healthy males in the age group 21-25 years. The subjects at all times were in a chamber at a temperature of 40° for 10 days. Four experiments were carried out, in each of which three men were simultaneously in the same chamber. In such a heat regime

1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CATION EXCRETION BY THE DOG'S KIDNEY AFTER CACL SUB2 AND MGCL SUB2
ADMINISTRATION DURING DIURESIS OR ANTIDIURESIS -U-
AUTHOR-(02)-GUSEV, G.P., NATOCHIN, YU.V.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHESKIY ZHURNAL SSSR IMENI I. M. SECHENOVA, 1970, VOL 56,
NR 5, PP 782-790
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CATION, DOG, KIDNEY, DIURESIS, CALCIUM CHLORIDE, MAGNESIUM
CHLORIDE, SODIUM, POTASSIUM, CALCIUM, MAGNESIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0374

STEP NO--UR/0239/70/056/005/0782/0790

CIRC ACCESSION NO--AP0132603

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132603

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NA, CA AND MG REABSORPTION WAS SHOWN TO INCREASE AT THE MAXIMUM WATER DIURESIS WHILE THEIR EXCRETION DECREASED, K PRIME POSITIVE EXCRETION WAS NOT CHANGED. AFTER CACL SUB2 ADMINISTRATION, CA PRIME POSITIVE POSITIVE AND MG PRIME POSITIVE POSITIVE EXCRETION EQUALLY INCREASED WHILE NA PRIME POSITIVE AND K PRIME POSITIVE EXCRETION PRESERVED THE SAME LEVEL. MGCL SUB2 ADMINISTRATION SHARPLY INCREASED MG PRIME POSITIVE POSITIVE EXCRETION, SLIGHTLY INCREASED THAT OF CA PRIME POSITIVE POSITIVE AND DECREASED NA PRIME POSITIVE AND K PRIME POSITIVE EXCRETION. AGAINST THE ANTIDIURETIC BACKGROUND, INTRAVENOUS MGCL SUB2 AND CACL SUB2 ADMINISTRATION WAS FOLLOWED BY INCREASED IN THE DIURESIS AND EXCRETION OF ALL FOUR CATIONS.

FACILITY: I. M. SECHENOV'S INSTITUTE OF EVOLUTIONARY PHYSIOLOGY AND BIOCHEMISTRY ACAD. SCI. USSR, LENINGRAD.

UNCLASSIFIED

USSR

UDC: 669.1/.89:539.43

GUSEV, G. V.

"Rupture with Changing Amplitude of Sign-Changing Plastic Deformation"

Fiz. Plastichnosti, Uprugosti Met. i Elektrodinam. Yavleniya v Ferritakh
[The Physics of Plasticity, Elasticity of Metals and Electrodynamic Phenom-
ena in Ferrites -- Collection of Works], No 1, Kuybyshev, 1972, pp 70-73
(Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract
No 8I473, by the author).

Translation: Based on a mechanism of sign changing deformation of plastic
metals suggested earlier, fatigue rupture is theoretically analyzed with
symmetrical cycles of the maximum effective stresses. An equation is pro-
duced defining the fatigue endurance of plastic materials loaded with a
variable amplitude of cyclical deformation. 4 biblio. refs.

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- 31 -

1/2 029 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--HETEROGENEITY OF DEFORMATION DISTRIBUTION DURING CREEP AND
EXTENSION -U-
AUTHOR-(03)-RYBALKO, F.P., GUSEV, G.V., KONOVALOVA, YE.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 66-9
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALUMINUM, PLASTIC DEFORMATION, METAL CREEP, TENSILE STRESS,
POLYCRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1994/1781

STEP NO--UR/0139/70/013/002/0066/0069

CIRC ACCESSION NO--AT0115610

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0115610

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY USING THE STATIC METHOD, THE QUANT. CHARACTERISTICS OF THE HETEROGENEITY OF DEFORMATION DISTRIBUTION DURING CREEP AND STATIC TENSION OF POLYCRYST. AL (99.9PERCENT PURE) WERE DETD. DURING CREEP THE HETEROGENEITY OF THE DISTRIBUTION OF THE MICRODEFORMATIONS ACCORDING TO THE DEGREES OF DEFORMATION IS CONTROLLED BY THE ELONGATION PROCESS AND, IN CONTRAST TO STATIC TENSION, IS ALMOST INDEPENDENT OF THE GRAIN SIZE, THE TEMP., AND THE ACTING LOAD. DURING THE CREEP PROCESS THE HETEROGENEITY OF THE DISTRIBUTION OF MICRODEFORMATIONS AT LARGE DEGREES OF DEFORMATION DEVELOPS MORE INTENSELY THAN DURING STATIC TENSION. FACILITY: URAL. GOSUNIV. IM. GOR'KOGO, SVERDLOVSK, USSR.

UNCLASSIFIED

Engineer

"Optoelectronic DC Modulator with Double Regulation of the Photoresistance Illumination"

Moscow, Pribery i Sistemy Upravleniya, No 1, Jan 71, p 53

Abstract: The design and operating characteristics of an optoelectronic DC modulator developed by the VNIIEP [All-Union Scientific Research Institute of Electrical Measuring Instruments] are discussed. This modulator is constructed on the basis of a gallium phosphide light diode and film photoresistance made of cadmium selenide. It can be used in modulation-demodulation type amplifiers and also as a commutative and decoupling optron for computers and automation devices. The developed modulator is considered simpler and better than transistorized or electromechanical modulators.

Double regulation of the photoresistance in the modulator is possible

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- 67 -

GUSEV, A. F.

THE MEASUREMENT OF THE HEAT EFFECTS OF A FERMENTATION PROCESS

L. F. Gusev, V. B. Fursikova, V. N. Froshin.

Institute of Biochemistry and Physiology of Microorganisms of the USSR Academy of Sciences.

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Prairie 200
Saskatoon,

The measurement of thermodynamics variables to characterize a fermentation process is particularly appropriate in microbiology, since these parameters are important aspect of the state of the biological system.

We developed a method of continuous measurements of the heat effects of the reaction, which can be widely used in different scientific researches. This method permits measuring the heat effect of the reactions at the different operation conditions in the fermenter. A differential flowing calorimeter has been constructed suitable for measurement of heat effects continuously in time. Compared to the previous models the new one has many advantages: a simple construction, a small size, universality in use, and the possibility to automatise the control process. The practical application of the calorimeter was studied on the model system. The heat effect measurements of esterification reaction were made according to the scheme: $RCOOH + R'OH \rightarrow RCOOR' + H_2O + Q$. The ethanol and acetic acid were chosen as the initial products. The experimental data of the heat effect were in good agreement with the calculated ones. The error from the calculated value was 1.8%. The measurements of the heat released during the fermentation of different microorganisms will be presented.

Clostr
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Bleeding, Al.
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organisms
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the cultur
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single and

So: OOE 324/14086-72, 19 Jun 72; 4th International Fermentation Conference
Kyoto, Japan - 19-24 March 1972 (Abstracts of Soviet Papers)

USSR

UDC: 621.317.715.5

RUSINOV, M. M., GUSEV, L. N.; Leningrad Institute of Precision Mechanics and Optics

"An Autocollimation System for Recording Variable Parameters"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 5, 1970, p 64, patent No 261560, filed 16 Jul 68

Abstract: This Author's Certificate introduces an autocollimation system for recording variable parameters. The system contains a sensing element made in the form of a string-type pickup, an autocollimation section and a photographic registration unit. As a distinguishing feature of the patent, sensitivity is increased by making the string in the sensing element with a reflecting cylindrical surface.

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USSR

UDC 614.72:547.264

BAYKOV, B. K., GUSEV, M. I., NOVIKOV, Yu. V., and YUDINA, T. V., Moscow
Scientific Research Institute of Hygiene imeni F. F. Erisman, Moscow

"The Biological Action of Butyl Alcohol as an Atmospheric Pollutant"

Moscow, Gigiyena i Sanitariya, No 2, Feb 73, pp 13-17

Abstract: In a study carried out on female rats, the effects of BuOH present in concentrations of 0.1, 1.0, and 20 mg/m³ in the air were investigated. The air containing BuOH was passed for 92 days at a rate of 30 l./min through chambers into which the animals had been placed. The general condition and weight of the animals, their fertility, the latent period of the defense reflex reaction, the level of nucleic acids in the blood, the porphyrin metabolism, the activity of enzymes (oxidase, catalase, and diastase) in the blood, the utilization of O₂, and the permeability of the histohematic barriers of organs were subjected to study in the course of the experiment. The results showed that BuOH in the concentration of 20 mg/m³ produced pathological changes in the values of the indexes measured and therefore was toxic, whereas exposure of the animals to this substance in the two lower concentrations did not produce conditions or reactions that differed significantly from those shown by controls. Among the effects produced

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USSR

BAYKOV, B. K., et al., Gigiyena i Sanitariya, No 2, Feb 73, pp 13-17

by BuOH in the toxic concentration were a lowering of fertility, wave-like changes in the latent time of the defense reflex reaction, a reduction of the content of catalase in the blood, an increase in the diastase activity, and a reduction in the utilization of O_2 . There was no decrease in the weight of the animals vs. controls as a result of exposure to BuOH.

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- 67 -

USSR

UDC 613(470)(091)

SHITEKOVA, A. P., AKSYUK, A. F., BEYLINIS, G. A., GEORGEVANA, V. L., GUSEV, M. I.,
ZHELIN, P. N., KOTLIN, Ya. L., PAL'TSEV, Ya. I., and WAGNEROV, G. G.

"Coping With Current Health Problems in the RSFSR"

Moscow, Gigiyena i Sanitariya, No 12, 1972, pp 8-16

Abstract: Health problems were a major concern of the communist leaders after the revolution who swiftly organized agencies and services to deal with epidemics and famines. As these were brought under control, health officials became involved in city planning, design and building of houses, etc. The increasing tempo of industrialization led the authorities by the 1930's to study atmospheric pollution and the disposal of municipal and industrial sewage. Water pollution and suitable use of water resources were major interests in the 1940's. Following the war, industrial hygiene and occupational diseases along with food poisoning became the center of attention. In the 1950's research was focused on the problems created by the chemicalization of agriculture, the use of pesticides in particular. The effects of chemicals on humans, sound, radiation, microwave, and other technological advances are now under study. Much stress is placed on preventive medicine, with frequent mass check-ups of the population, particularly children and adolescents. The impact of 1/2

USSR

SHITSKOVA, A. P., Gigiyena i Sanitariya, No 12, 1972, pp 8-16

comprehensive, accurate health statistics was recognized in the 1920's and they are constantly being refined and improved as an indispensable basis for planning and taking effective action.

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USSR

UDC 614.715:614.72

YELFIMOVA, YE. V., Candidate of Medical Sciences, GUSEV, M. I., Professor,
NOVIKOV, YU. V., Doctor of Medical Sciences, YUDINA, T. V., SERGEYEV, A. N.,
Candidate of Medical Sciences, Moscow Scientific Research Institute of Hygiene
Imeni F. F. Erisman

"Study of the Combined Resorptive Effect of Atmospheric Pollution (Gas and
Dust)"

Moscow, Gigiyena i Sanitariya, No 8, 1972, pp 11-15

Abstract: A study was made of the combined effect of sulfur dioxide, carbon monoxide, phenol and finely dispersed dust characteristic of the air pollution caused by ferrous metallurgy enterprises. Experimental studies were performed on white rats for 96 days in the presence of an aerosol with the following concentrations: SO_2 0.05 mg/m³, CO 1 mg/m³, phenol 0.01 mg/m³ and 0.15 mg/m³ of dust. Significant changes took place in the animals with respect to all tests. The effect of the aerosol in a concentration of 0.5 mg/m³ implies a reduction in the total nucleic acids and the permeability of the histohematic barriers in the ovaries. One group of rats underwent stable changes in behavior and biochemical and physiological reactions. The total combinations of fractional concentrations of the substances with respect to their threshold values at a level less than one (0.76) has no effect on the animals.

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- 85 -

USSR

YELFINOVA, YE. V., et al., Gigiyena i Sanitariya, No 8, 1972, pp 11-15

The combined resorptive effect of small concentrations of sulfur dioxide, carbon monoxide, phenol and dust is characterized by the summation effect. In estimating the degree of pollution of the atmospheric air in samples taken around the clock, a level for which the total fractional concentration does not exceed 0.76 of the maximum permissible concentrations is recommended.

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USSR

UDC 614.72-07

GUSEV, M. I., Professor, Moscow Scientific Research Institute of Hygiene imeni
F. F. Erisman

"Scientific and Practical Approach to Research on the Combined Effects of Low
Concentrations of Toxic Substances in the Air"

Moscow, Gigiyena i Sanitariya, No 8, Aug 70, pp 99-102

Abstract: On the basis of a review of the Soviet literature, it is concluded
that the effects of low concentrations of toxic substances in the air (e.g.,
chlorine and hydrogen chloride; acetone and phenol; ethylene, propylene, and
butylene; sulfur dioxide, phenol, and carbon monoxide) are those of simple
summation. It is therefore unnecessary (as well as virtually impossible) to
study the action of the almost limitless number of combinations of chemical
substances emitted by groups of industrial plants or even by individual plants.
The following formula is suggested as an aid to industrial planners and en-
vironmental specialists:

$$x = \frac{a}{M_1} + \frac{b}{M_2} + \frac{c}{M_3} \text{ etc.}$$

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USSR

GUSEV, M. I., Gigiyena i Sanitariya, No 8, Aug 70, pp 99-102

where x is the unknown total value (not the concentration), and $\frac{a}{M_1}$, $\frac{b}{M_2}$, etc.

is the concentration of the substance to be determined divided by the corresponding maximum permissible concentration when acting alone. Investigations of specific combinations of toxic gases at the level of minimally active and maximally inactive concentrations are warranted only when the mechanism of action at higher concentrations is of interest, when the toxic substances are of a different physicochemical nature (e.g., dust and gas), or when the routes of entry into the body are different (e.g., gas + water + food).

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- 87 -

USSR

UDC 576.851.55.095.2

AZOVA, L. G., GUSEV, M. V., KHOR'KOVA, G. A., and KORSHUNOV, I. S., Moscow State University

"Molecular Oxygen Uptake by Cell Suspensions of Clostridium butyricum"

Moscow, Mikrobiologiya, No 5, 1971, pp 799-802

Abstract: The rate of oxygen uptake by Clostridium butyricum strains MO-1, BC-6K, and USA in phosphate buffer was found to vary both with the initial concentration of dissolved oxygen and with the density of the cell suspensions. It was particularly high in the MO-1 and USA strains in the lag phase. At high initial oxygen concentrations (7.0 to 10.0 mg/liter) the MO-1 and USA strains took up 2.5 to 3.0 times more oxygen than did the BC-6K strain. An increase in the cell concentration reduced the rate in all cases. Preliminary incubation of the cell suspensions with oxygen greatly reduced the rate of uptake by the MO-1 and USA strains but had no effect on that of the BC-6K strain.

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USSR

UDC 576.851.12.095.14

GUSEV, M. V. and SHENDEROVA, L. V., Soil Biology Faculty, Moscow State University imeni M. V. Lomonovsov

"The Effect of Light and Some Inhibitors on Oxygen Absorption by Photosynthesizing Bacteria"

Moscow, Mikrobiologiya, Vol 40, No 4, 1971, pp 638-644

Abstract: The effect of light and selective blockage by inhibitors of some oxidation reactions on the oxygen absorption by suspensions of photosynthesizing bacteria (obligate and facultative anaerobes) were compared. Purple bacteria *Rhodopseudomonas spheroides* and *Ectothiorhodospira shaposhnikovii* (facultative anaerobes), purple sulfur bacteria *Chromatium minutissimum* and green sulfur bacteria *Chloropseudomonas ethylica* (both obligate anaerobes) were studied. In the absence of exogenous substrates, oxygen absorption is not responsive to amytal and cyanide. Reactions can be either stimulated by light, indifferent to it, or inhibited by it. The inclusion of exogenous oxidizable components in the reaction with oxygen triggers new processes that are dependent or independent of the respiratory inhibitors investigated. Oxygen absorption of *Rh. spheroides* and *Ect. shaposhnikovii* was greatest in the presence of alpha-ketoglutarate, and

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USSR

GUSEV, M. V. and SHENDEROVA, L. V., Mikrobiologiya, Vol 40, No 4, 1971, pp 638-644

less in the presence of malate or succinate. The effect of fluoroacetate on oxygen absorption by suspensions of photosynthesizing bacteria in darkness was investigated using four substrates. A suggested scheme for oxygen absorption in photosynthesizing bacteria is proposed. It was concluded that the anaerobic properties of *Chr. minutissimum* are less pronounced than those of *Chr. ethylica*.

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- 16 -

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ROLE OF MOLECULAR OXYGEN IN THE METABOLISM OF MICROORGANISMS -U-
AUTHOR--(02)-GUSEV, M.V., NIKITINA, K.A. G
COUNTRY OF INFO--USSR
SOURCE--USP. SOVREM. BIOL. 1970, 69(1), 72-94
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MICROORGANISM, PHOTOSYNTHESIS, OXYGEN METABOLISM, ENZYME
ACTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/1904 STEP NO--UR/0221/70/069/001/0072/0094
CIRC ACCESSION NO--AP0127305
UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0127305
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW IS PRESENTED WHICH
COVERED THE FOLLOWING TOPICS: O EVOLUTION BY PHOTOSYNTHESIZING
MICROORGANISMS, TYPES OF O PARTICIPATION IN METABOLISM, AND OXYGENASE
SYSTEMS. 97 REFS. FACILITY: BIOL. POCHV. FAK., MOSK. GOS.
UNIV., MOSCOW, USSR.

UNCLASSIFIED

1/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--THE RESPONSE OF SOME CLOSTRIDIUM BACTERIA TO MOLECULAR OXYGEN --U--

AUTHOR--(03)-AZOVA, L.G., GUSEV, M.V., IVOYOV, V.S.

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 1, PP 55-59

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CLOSTRIDIUM, CULTURE MEDIUM, OXYGEN CONSUMPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1410

STEP NO--UR/0220/70/039/001/0055/0059

CIRC ACCESSION NO--AP0109472

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0109472

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESPONSE TO MOLECULAR OXYGEN WAS STUDIED AMONG SEVERAL BUTYRIC BACTERIA BELONGING TO THE CLOSTRIDIUM GENUS. OXYGEN THRESHOLD CONCENTRATIONS WERE DETERMINED AND CONSUMPTION OF OXYGEN, DISSOLVED IN THE CULTURAL BROTH, WAS STUDIED DURING THE LAG PHASE. THE SO CALLED OBLIGATE ANAEROBIC PROPERTY OF THE BACTERIA WAS FOUND TO VARY QUANTITATIVELY AND QUALITATIVELY IN DIFFERENT STRAINS. THE QUANTITATIVE DIFFERENCE CONSISTED IN VARIOUS THRESHOLD VALUES OF OXYGEN CONTENT IN THE MEDIUM, WHILE THE QUALITATIVE ONE, IN VARIOUS ABILITY AND NECESSITY TO CONSUME OXYGEN BEFORE GROWTH.

Acc. Nr:

AP 0051119

Abstracting Service:

CHEMICAL ABST. 5-7c

Ref. Code:

4R0138

GUSEV M. V.

101596r Effect of the vulcanization of latexes on the biological stability of films obtained from them. Spektor, E. M.; Gutman, A. M.; Kondrat'eva, E. N.; Gusev, M. V. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). Kauch. Rezina 1970, 29(1), 15-16 (Russ). S vulcanization of butadiene-styrene SKS-65GP latex (I) produced increased biol. stability and fungicidal properties of I films. Nairit L-7 latex films had higher resistance to molds than I films. Vulcanization of L-7 films also had a favorable effect on their fungus resistance. I and L-7 films inhibited bacterial growth. CKJR

REEL/FRAME
19811162

Veterinary Medicine

USSR

UDC 619:616.988.73-097:636.5

RAFALOVICH, A. Ye., GUSEV, N. S., BONDARENKO, I. M., and BURTSEV, V. I.,
All-Union Scientific Research Institute of Veterinary Virology and
Microbiology

"The Effects of Aerosol Particle Dimensions on Vaccine Efficacy"

Moscow, Veterinariya, No 8, 1973, pp 39-40

Abstract: Evaluation was made of a Newcastle disease virus (NDV) B₁ aerosol vaccine, using 35-40-day-old chicks (pulmonary ventilation volume 0.21-0.4 liters/min; 2-10 min exposure). On the basis of hemagglutinin titers in the 103 chicks, vaccines in which the particle size ranged from 1-12 μ m were 17.7 times more effective than those in which the range was 20-80 μ m. The larger sized particles are retained at the upper levels of the respiratory tract and do not reach the alveoli, where absorption of the particles into the blood stream is the greatest.

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USSR

GUSEV, O., Pravda correspondent, Ukrainian SSR

"What to Wear at Work"

Moscow, Pravda, 24 Nov 73, p 3

Translation: A. I. Sandukovskiy, chief engineer of the Republic's "Spetsodezhda" Association, replying to the above question, remarked that not long ago an indefinite order was received by the association. "Prepare a million canvas suits for the winter." What kind of suits? The customer did not specify; neither did the sewers know. An attitude of indifference toward "Spetsodezhda" prevailed for a long time.

I am holding in my hands an album with drawings of jackets, coveralls, and head gear. The drawings conclusively reflect the changes in the production of work clothing which had taken place since the organization of the Spetsodezhda association.

Until its creation each factory manufactured dozens of types of special clothing. Seven models of suits which practically differed neither in their external look, nor in design and fabrics used were manufactured for miners, for instance. The same was true of the manufacture of robes, coveralls, and jackets. Local sewers were interested only in their own models. Now each of

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- 54 -

USSR

GUSEV, O., Pravda, 24 Nov 73, p 3

the 19 factories specialize in the production of strictly specified models. A scientific-technical sewing factory created at the association became the only organization responsible for the creation of models and the preparation of all technical documentation. The centralization of designing and technological preparation made it possible to introduce the most required models, and create a style and even fashion for work clothing.

This respectable but difficult obligation of being a ruler of fashions required a different qualitative approach to the work, said A. P. Babiyenko -- chief engineer of Ukrshveypprom.

The workers of the experimental-technical laboratory together with representatives of the Department for the Protection of Labor visit slaughter houses, travel with harvest combines to the fields, and ascend electric transmission poles with installation workers, if conditions of investigation require it. And this unquestionably enabled them to acquire a deep knowledge of the needs of the consumers. For instance, at the request of the Makeyevskiy Scientific Research Institute for the Protection of Workers in the Mining Industry, Kiev representatives of Spetsodezhda developed 11 models of suits for workers handling explosives, miners working in deep shafts, and coal

2/7

USSR

GUSEV, O., Pravda, 24 Nov 73, p 3

miners working in permafrost zones.

The creation of a group of models for rural workers has been completed. Not long ago an experimental group of suits for masters of milking machines was tested at the Kiev Sovka sovkhos. On the basis of these and other investigations the Association published express-information which was to acquaint rural workers with the models of clothing for workers of different occupations. Regrettably, this information has not as yet been properly mastered everywhere. Orders received from the Ministry of Agriculture Ukrainian SSR, as in the past, are of a general character and do not even separate the ordered clothing on the basis of their occupational assignments.

Practical experience teaches that more and more frequently production of special clothing have to resort to the use of electronic computers, and invite representatives of many occupations to participate in their creative activities. The list of institutes with which Spetsodezh is systematically maintains creative ties is growing with each passing year. We shall tell how electric welders have a number of times asked suppliers to provide them with protective suits. The suppliers promised to help and contacted the modellers, but the fabrics used to produce the special clothing was not fireproof.

3/7

- 95 -

USSR

GUSEV, O., Pravda, 24 Nov 73, p 3

Scientists of the Coordinating Council at the Institute of Electric Welding imeni Ye. I. Paton jointly with textile workers developed a suit which met the basic qualitative requirements needed for protection from molten metal sparks.

Unusual electric clothing, a frost-resisting suit named Penguin was developed in our country for the first time as a result of cooperation between sewers and scientists. The Penguin is a warming vest for work under conditions of the Far North. Its creators are specialists at the Institute of Problems on Material Study, Academy of Sciences Ukrainian SSR, workers at an experimental-technical laboratory, and Kiev hygienists. The suit was tested during the construction of the Messoyakhna-Dudinka gas pipe, on Koli peninsula, and in Antarctic expeditions. Outwardly it differs little from an ordinary vest; when connected, however, with a room battery it warms better than any fur even at -40° temperature. Electric footwear has been found to be just as warm and comfortable.

The mass production of Penguins, however, is slowly being mastered, although according to the Ministry of Light Industry Ukrainian SSR, a specialized base was established for this purpose at the Chopovichskaya sewing
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USSR

GUSEV, O, Pravda, 24 Nov 73, p 2

factory in Zhitomir oblast. Not long ago an order for the manufacture of 20,000 units obtained by the State Committee of Problems of Labor and Wages and VTsSPS [All-Union Central Council of Trade Unions] from different ministries and organizations was received. These are, of course, only the initial orders for the new product, for the need for such protective clothing is considerable.

It is necessary to overcome the organizational and technical difficulties which hinder the mass production of the electric suit as rapidly as possible, for it is not possible, of course, to assume that the serial production of the Penguin suits will be achieved through the efforts of the Design Bureau of the Institute for Problems of Material Study, Academy of Sciences Ukrainian SSR. Considerable support in this respect may be rendered by the enterprise collectives of the ministries and departments supplying the Penguin suits with current conducting fabrics and thermal regulators. Is it necessary to say that the operative provision of workers with comfortable special clothing will not only exert a favorable psychological effect on people, but will serve to increase labor productivity, improve working conditions, and

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- 96 -

USSR

GUSEV, O., Pravda, 24 Nov 73, p 3

will elevate the general tone of production?

An increase of models which are new in fashion, assignation, and fabrics is pictured in each number of the catalog published by Ukrshvoypro. In the course of the 1973 wholesale fair alone the Association displayed almost 150 models of special clothing for men and women, including 15 new models. There are also a number of interesting suggestions. Work clothing well made, well fitted to the figure, and skillfully selected for color eases our labors.

A considerable number of models which attract by the quality of their fabrics, the brightness of their colors, and the sturdiness of the impregnated materials are seen on exhibition stands. At times, however, the fabrics do not get any farther than the stands.

Regrettably, the demand of the Spetsodezhda enterprises for required fabrics is not fully satisfied. The Ivanovskiy outlet base of Kordkhtil'torg, Orekhovo-Zuyevskiy, Khersonskiy, Kamyshinskiy cotton combines, and a number of other enterprises refused to unite their efforts with regard to a number of fabrics, blaming the lack of required dyes.

It is impossible not to agree with the Spetsodezhda workers' demands from the textile workers, chemists, accessory producers, and all who are

6/7

USSR

GUSEV, O., Pravda, 24 Nov 73, p 3

responsible for the quality of the raw material supplied to the Association. The time has long come for an attitude of consideration and exactness with respect to the output of materials for special clothing.

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- 97 -

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UR9012

AUTHOR-- GUSEV, O., CORRESPONDENT

TITLE-- A FLAG OVER AN AIRPLANE

NEWSPAPER-- PRAVDA, JANUARY 28, 1970, P 1, COLS 5-7

ABSTRACT-- THE ARTICLE DESCRIBES THE "SOCIALIST LABOR COMPETITIONS" AT THE KIEV AIRCRAFT PLANT IMENI 50TH ANNIVERSARY OF THE GREAT OCTOBER REVOLUTION. THE PLANT PRODUCES "AN-24" AIRCRAFT. IT IS SAID THAT THE PLANT PRACTICES SUCH ADVANCED TECHNOLOGICAL TECHNIQUES AS EXPLOSIVE FORMING, ULTRASONICS, ROENTGENOGRAPHY, GLUE-WELDED JOINING OF METALS, ETC.

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1/2 012
TITLE--WORKER'S SALUTE -U-

UNCLASSIFIED

PROCESSING DATE--18SEP70

AUTHOR--GUSEV, O.

COUNTRY OF INFO--USSR

SOURCE--PRAVDA, APRIL 23, 1970, P 8, COL 1

DATE PUBLISHED--23APR70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SHIPYARD, SHIPBUILDING ENGINEERING, SHIP HULL, INSHORE WATER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1985/0070

STEP NU--UR/9012/70/000/000/0008/0008

CIRC ACCESSION NO--AN0100629

UNCLASSIFIED

2/2 012
CIRC ACCESSION NO--AN0100629

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KEEL FOR A NEW DNIEPER RIVER
BOAT WITH A 3.2 DRAFT HAS BEEN LAID AT THE KIEV SHIPBUILDING FACTORY.
THIS NEW BOAT IS THE FIRST OF THE "UL, YANOVSK" SERIES, A DEMAND FOR
WHICH HAS BEEN CREATED BY THE FORECAST COMPLETION IN A FEW YEARS OF THE
KANEV GES WHICH WILL ALLOW LARGE SHIPS TO CALL ON THE UKRAINE.

UNCLASSIFIED

USSR

UDC: 621.373.531(088.8)

GUSEV, O. A.

"A Ring Oscillator Which Produces High-Frequency Pulses"

USSR Author's Certificate No 259253, filed 3 Jul 68, published 24 Apr 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11G185 P)

Translation: This Author's Certificate introduces a ring oscillator which produces high-frequency pulses. The unit consists of cells, each of them equipped with a choke and a network made up of a thyristor and capacitor connected in series. The capacitor is connected to a common single-phase load and to one of the terminals of the supply voltage. To control the output voltage over a broad range when there are small changes in the frequency of the controlling pulses, the tie-point between the thyristor and capacitor is connected through a choke to the other supply voltage terminal.

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- 39 -

USSR

UDC: 621.373.531.3(088.8)

GUSEV, O. A.

"A Device for Stabilizing the Voltage Across a Storage Capacitor"

USSR Author's Certificate No 264485, filed 8 Jul 68, published 12 Jun 70
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12G251 P)

Translation: A device is proposed for stabilizing the voltage across a storage capacitor. The unit contains an additional capacitor, thyristors, a voltage divider and a high-voltage comparator with trigger device. To simplify the control circuit and reduce power losses, a semiconductor diode is connected in parallel-opposition with the thyristor, which is tied to the additional capacitor. The additional capacitor discharges through the semiconductor diode into the storage capacitor.

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- 35 -

Oscillators and Modulators

USSR

UDC: 521.373.531(088.8)

GUSEV, O. A.

"A Ring-Type High-Frequency Pulse Oscillator"

USSR Author's Certificate No 261551, filed 5 Sep 68, published 25 May 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 26244 P)

Translation: This Author's Certificate introduces a ring-type high-frequency pulse oscillator which contains cells, each of them being equipped with a network comprised of a thyristor and capacitor connected in series with the common point connected through a choke to one of the terminals of the voltage supply source; the other terminal of the source is connected through a common single-phase load to the thyristor. To increase speed and extend the frequency range of the output voltage pulsations, the cells have semiconductor diodes which shunt the networks, and additional chokes through which the capacitors are connected to the point of connection between the load and the terminal of the voltage supply source.

1/2 334 UNCLASSIFIED PROCESSING DATE 11/10/70
TITLE--OPTIMIZATION OF STRESS RIGIDITY AND ELASTICITY OF JOINTS
ACCELERATION--
AUTHOR--GATSON, N.Y. 1970, P. 102-106. SOURCE--
COUNTRY OF ORIGIN--USSR

SOURCE--LENINGRAD, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY.
PRIBOROSTROYENIYE, NO 2, 1970, PP 102-106
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR, PHYSICS
TOPIC TAGS--ACCELEROMETER, MECHANICAL FASTENER, ELASTICITY, BUTT WELDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1646

STEP NO--UR/0146/70/000/002/0102/0106

CIRC ACCESSION NO--A10123484

UNCLASSIFIED

ON THE BASIS OF THESE RESULTS, SEMIEMPIRICAL RELATIONSIPS ARE OBTAINED
FOR CALCULATING FLAT BUTT JOINTS AND THREADED JOINTS OF ACCELEROMETERS.
THE THEORETICAL AND EXPERIMENTAL DATA ARE COMPARED. FACILITY:
LENINGRAD STATE UNIVERSITY.

UNCLASSIFIED

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AUTHOR-- ~~GUSEV, O.~~, CORRESPONDENT

TITLE-- A FLAG OVER AN AIRPLANE

NEWSPAPER-- PRAVDA, JANUARY 28, 1970, P 1, COLS 5-7

ABSTRACT-- THE ARTICLE DESCRIBES THE "SOCIALIST LABOR COMPETITIONS" AT THE KIEV AIRCRAFT PLANT IMENI 50TH ANNIVERSARY OF THE GREAT OCTOBER REVOLUTION. THE PLANT PRODUCES "AN-24" AIRCRAFT. IT IS SAID THAT THE PLANT PRACTICES SUCH ADVANCED TECHNOLOGICAL TECHNIQUES AS EXPLOSIVE FORMING, ULTRASONICS, ROENTGENOGRAPHY, GLUE-WELDED JOINING OF METALS, ETC.

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UNCLASSIFIED

PROCESSING DATE--18SEP70

1/2 012

TITLE--WORKER'S SALUTE -U-

AUTHOR--GUSEV, O.

COUNTRY OF INFO--USSR

SOURCE--PRAVDA, APRIL 23, 1970, P 8, COL 1

DATE PUBLISHED--23APR70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

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CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1985/0070

STEP NO--UR/9012/70/000/000/0008/0008

CIRC ACCESSION NO--AN0100629

UNCLASSIFIED

CIRC ACCESSION NO--AN0100629
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT. THE KEEL FOR A NEW DNIEPER RIVER
BOAT WITH A 3.2 DRAFT HAS BEEN LAID AT THE KIEV SHIPBUILDING FACTORY.
THIS NEW BOAT IS THE FIRST OF THE "UL, YANOVSK" SERIES, A DEMAND FOR
WHICH HAS BEEN CREATED BY THE FORECAST COMPLETION IN A FEW YEARS OF THE
KANEV GES WHICH WILL ALLOW LARGE SHIPS TO CALL ON THE UKRAINE.

UNCLASSIFIED

UDC: 621.373.531(088.8)

USSR

GUSEV, O. A.

"A Ring Oscillator Which Produces High-Frequency Pulses"

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UDC: 621.373.531.3(088.8)

USSR

GUSEV, O. A.

"A Device for Stabilizing the Voltage Across a Storage Capacitor"

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(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12G251 P)

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- 35 -

Oscillators and Modulators

USSR

UDC: 621.373.531(088.8)

GUSEV, O. A.

"A Ring-Type High-Frequency Pulse Oscillator"

USSR Author's Certificate No 261551, filed 5 Sep 68, published 25 May 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2G244 P)

Translation: This Author's Certificate introduces a ring-type high-frequency pulse oscillator which contains cells, each of them being equipped with a network comprised of a thyristor and capacitor connected in series with the common point connected through a choke to one of the terminals of the voltage supply source; the other terminal of the source is connected through a common single-phase load to the thyristor. To increase speed and extend the frequency range of the output voltage pulsations, the cells have semiconductor diodes which shunt the networks, and additional chokes through which the capacitors are connected to the point of connection between the load and the terminal of the voltage supply source.

1/2 034 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DETERMINING THE CONTACT RIGIDITY AND ELASTICITY OF MOUNTING
ACCELEROMETERS -U-
AUTHOR--(04)--GAYUN, V.V., GUSEV, O.P., ZEGZHDA, S.A., YUSHKOV, M.P.
COUNTRY OF INFO--USSR
SOURCE--LENINGRAD, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY.
PRIBOROSTROYENIYE, NO 2, 1970, PP 102-106
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR, PHYSICS
TOPIC TAGS--ACCELEROMETER, MECHANICAL FASTENER, ELASTICITY, BUTT WELDING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/1646 STEP NO--UR/0146/70/000/002/0102/0106
CIRC ACCESSION NO--AT0123484
UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0123484

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BASIC RESULTS ARE PRESENTED FROM AN EXPERIMENTAL INVESTIGATION OF THE CONTACT RIGIDITY OF BUTT JOINTS. ON THE BASIS OF THESE RESULTS, SEMIEMPIRICAL RELATIONSHIPS ARE OBTAINED FOR CALCULATING FLAT BUTT JOINTS AND THREADED JOINTS OF ACCELEROMETERS. THE THEORETICAL AND EXPERIMENTAL DATA ARE COMPARED. FACILITY: LENINGRAD STATE UNIVERSITY.

UNCLASSIFIED

USSR

UDC: 539.385

ALEKHIN, V.P., SHORSHOROV, M.Kh, and GUSEV, O.V., Institute
of Metallurgy imeni A.A. Baykov, Academy of Sciences USSR

"Anomaly of the Mechanical Properties of Crystal Surface
Layers"

Moscow, Sb. "Ustalost' metallov i splavov". "Nauka" Press,
1971, pp 48-53

Translation: Discussed are certain aspects of the anomalous behavior of plastic deformation near the surface of crystal-line materials. The problem lies in the greater ease of formation and mobility of dislocations at the initial deformation stage. It is shown that the critical shear stress and activation energy values in the crystal surface layers are considerably lower and that the activation volume is much higher than the same characteristics in the bulk of the crystal. All possible factors causing the anomaly in the mechanical properties in crystal surface layers are analyzed. It is suggested that the alleviated conditions of plastic

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USSR

ALEKHIN, V. P., et al, "Anomaly of the Mechanical Properties of Crystal Surface Layers", Sb. "Ustalost' metallov i splavov, 1971", pp 48-53

deformation in the near-surface region of the crystal are governed not only by the greater amount of quick-acting homogeneous and various types of heterogeneous sources of shear but also by the different speeds of dislocation mobility at the surface of the crystal (v') and within it (v'') as well as by certain distinctions in the potential lattice shape in these regions. It is assumed (at least, for hard homopolar crystals) that $v' > v''$ and that the Peierls-Nabarro barriers are slightly smaller and their width is greater than the similar parameters in the bulk of the crystal. Cited are certain experimental data to support the above hypothesis. (1 illustration, 26 bibliographic references; summary).

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- 20 -

USSR

UDC 621.791.16

ALEKHIN, V. P., GUSEV, O. V., and MAZUR, A. I., Moscow

"Investigation of the Effect of Ultrasonic Oscillations on the Production of an Aluminum Joint with Monocrystalline Silicon"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 3, May-Jun 71, pp 100-108

Abstract: Results are presented of the investigation of regularities in joining by ultrasonic welding (USW) small aluminum wires with silicon single crystals with a view to producing ohmic contacts. The dependence of the contact quality on the change of USW parameters was metallographically examined. Depths of disturbed surface layers of Si single crystals were determined by the method of anomalous transmission of X-rays. On the basis of the investigations, optimum parameters of USW were selected. The activating effect of ultrasonic oscillation on the production of a strong joint of Al with Si without their preheating is analyzed. Four figures, 20 bibliographic references.

1/1

UDC 539.374

USSR

ALEKHIN, V. P., SHORSHOROV, M. Kh., GUSEV, O. V., and MERKVLOV, V. A.

"Method of Studying Surface Plastic Deformation of Single Crystals in the Area of Brittle Rupture"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 165-171

Translation: A method is suggested for studying the specifics of the deformation of surface layers in comparison to volumetric deformation of brittle crystals by heating them in the die through an insert of a plate material, and calculation formulas are presented for determination of normal and tangential stresses in the contact zone. The method of photoelasticity is used to show the advantages of this method in comparison with determination of microhardness. Experiments are performed on the loading of Si and Mo crystals through aluminum and lead inserts, and the depth of the layer involved in plastic deformation is determined, sharply decreasing with decreasing temperature from 550 to -196°C . 5 Figures; 14 Bibliographic References.

- 58 -

Miscellaneous

USSR

UDC 542.5

GOREV, V. A., ~~GUSEV, P. A.~~ and TROSHIN, YA. K., Institute of General and Inorganic Chemistry, Academy of Sciences UkrSSR, Kiev

"Modelling of the Rise and the Combustion of Light Gas Cloud in the Atmosphere"

Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 4, Aug 72, pp 875-878

Abstract: The problem of the movement of a cloud of burning gas and its mixing with surrounding air is analyzed, the upward movement is due to the hydrostatic lifting force. On the strength of theoretical considerations the conclusion was reached that the modelling of such a system is possible on the basis of Frude numbers and geometrical similitude. Theoretical principles were examined through laboratory experiments with and without ignition; the agreement between the calculated and experimental values was found to be very good. Initially the cloud accelerates, reaching a maximum rate of rise, and then the upward movement becomes gradually slower.

- END -

CSO: 1841-W

1/1

UNCLASSIFIED
TITLE--EFFECT OF HARVEST TIME AND STORAGE TEMPERATURE ON THE NUCLEIC ACID
LEVEL IN TISSUES OF POTATO TUBERS -U-
AUTHOR--(02)--GUSEV, S.A., POPOV, V.G.

PROCESSING DATE--20NOV70

COUNTRY OF INFO--USSR

SOURCE--PRIKL. BIOKHIM. MIKROBIOLOG. 1970, 6(2), 138-41

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FOOD STORAGE, TEMPERATURE, NUCLEIC ACID, DNA, RNA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3007/C120

STEP NO--UR/0411/70/006/002/0138/0141

CIRC ACCESSION NO--AP0135617

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135617

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF HARVEST TIME AND STORAGE TEMP. ON THE CONTENT OF NUCLEIC ACIDS IN EYES OF POTATO TUBERS WAS INVESTIGATED. THE RNA AND DNA LEVELS IN EYES OF NONMATURE TUBERS WERE GREATER THAN THOSE OF MATURE ONES DURING HARVEST AND STORAGE. RNA DECREASED SLIGHTLY DURING WINTER STORAGE BUT SUDDENLY INCREASED IN MAY. DNA VARIED IRREGULARLY AND THE TREND WAS DEPENDENT ON VARIETY AND STORAGE TEMP.

UNCLASSIFIED

AA0040779 S. F. GUSEV

UR 0482

1-78

Soviet Inventions Illustrated, Section I Chemical, Derwent,

240889 RESISTANCE SPOT WELDING was improved by continuous measurement of resistance between welding electrodes 1. In this method two sheets of metal are pressed between the electrodes with a force P and subjected to ultrasonic vibrations using a generator 4. The resistance between the electrodes is continuously measured by a unit 2 which at the optimum value of this resistance actuates a controller 6 to switch welding current for a given time interval. The value of the optimum resistance and other parameters of the welding process depend on the type and state of the welded sheets and on the welding equipment used.

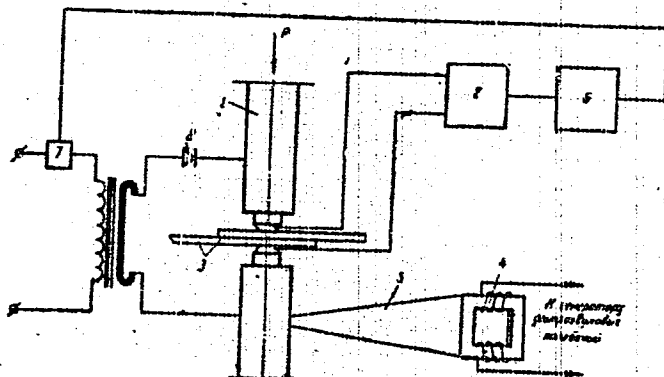
15.9.67 as 1186067/25-27. S.F. GUSEV et al.
(22.8.69) Bul 13/1.4.69. Class 21h. Int.Cl.B 23k.

THORS: Gusev, S. F.; Koryakovskiy, O. A.; and Sidiyakin,

V. A.

19750485

AA0040779



2/2

19750486

1D

USSR

ALEXANDER, V. P., et al, "Anisotropy of the Mechanical Properties of Crystals Surface Layers", Sb. "Doklady i soobshcheniya", 1971, no. 6, 408.

deformation in the near-surface region of the crystal are governed not only by the greater amount of quenching, heterogeneous and various types of heterogeneous sources of shear but also by the different speeds of dislocation mobility at the surface of the crystal (V') and within it (V'') as well as by certain distinctions in the potential lattice shape in these regions. It is assumed (at least, for hard homogeneous crystals) that $V' > V''$ and that the Peierls-Nabarro barriers are slightly smaller and their width is greater than the similar parameters in the bulk of the crystal. Cited are certain experimental data to support the above hypotheses. (1 illustration, 26 bibliographic references; summary).

2/2

USSR

UDC 539.374

ALEKHIN, V. P., SHORSHOROV, M. Kh., GUSEV, O. V., and MERKULOV, V. A.

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1/1

- 58 -

Miscellaneous

USSR

UDC 542.5

GOREV, V. A., ~~CHSEV, P. A.~~ and TROSHIN, YA. K., Institute of General and Inorganic Chemistry, Academy of Sciences UkrSSR, Kiev

"Modelling of the Rise and the Combustion of Light Gas Cloud in the Atmosphere"

Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 4, Aug 72, pp 875-878

Abstract: The problem of the movement of a cloud of burning gas and its mixing with surrounding air is analyzed, the upward movement is due to the hydrostatic lifting force. On the strength of theoretical considerations the conclusion was reached that the modelling of such a system is possible on the basis of Froude numbers and geometrical similitude. Theoretical principles were examined through laboratory experiments with and without ignition; the agreement between the calculated and experimental values was found to be very good. Initially the cloud accelerates, reaching a maximum rate of rise, and then the upward movement becomes gradually slower.

- END -

CSO: 1841-W

1/1

1/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EFFECT OF HARVEST TIME AND STORAGE TEMPERATURE ON THE NUCLEIC ACID
LEVEL IN TISSUES OF POTATO TUBERS -U-
AUTHOR--(02)-GLUSEV, S.A., POPOV, V.G.

COUNTRY OF INFO--USSR

SOURCE--PRIKL. BIOKHIM. MIKROBIOLOG. 1970, 6(2), 138-41

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FOOD STORAGE, TEMPERATURE, NUCLEIC ACID, DNA, RNA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0120

STEP NO--UR/C411/70/006/002/0138/0141

CIRC ACCESSION NO--AP0145617

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--20NDV70

CIRC ACCESSION NO--AP0135817

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF HARVEST TIME AND STORAGE TEMP. ON THE CONTENT OF NUCLEIC ACIDS IN EYES OF POTATO TUBERS WAS INVESTIGATED. THE RNA AND DNA LEVELS IN EYES OF NONMATURE TUBERS WERE GREATER THAN THOSE OF MATURE ONES DURING HARVEST AND STORAGE. RNA DECREASED SLIGHTLY DURING WINTER STORAGE BUT SUDDENLY INCREASED IN MAY. DNA VARIED IRREGULARLY AND THE TREND WAS DEPENDENT ON VARIETY AND STORAGE TEMP.

UNCLASSIFIED

AA0040779 S. F. GUSEV

UR 0482

1-70

Soviet Inventions Illustrated, Section I Chemical, Derwent,

240889 RESISTANCE SPOT WELDING was improved by continuous measurement of resistance between welding electrodes 1. In this method two sheets of metal are pressed between the electrodes with a force P and subjected to ultrasonic vibrations using a generator 4. The resistance between the electrodes is continuously measured by a unit 2 which at the optimum value of this resistance actuates a controller 6 to switch welding current for a given time interval. The value of the optimum resistance and other parameters of the welding process depend on the type and state of the welded sheets and on the welding equipment used.

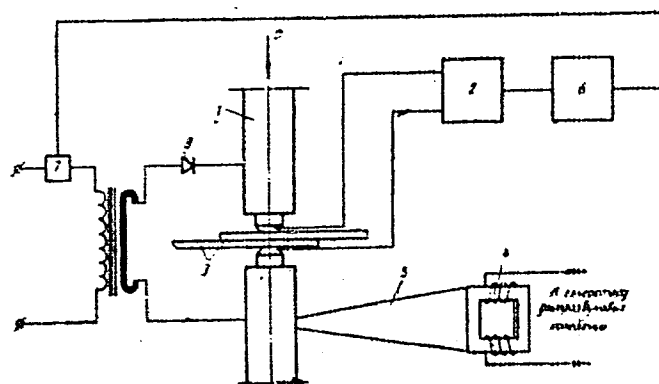
15.9.67 as 1186067/25-27. S.F. GUSEV et al.
(22.8.69) Bul 13/1.4.69. Class 21h. Int.Cl.B 23k.

AUTHORS: Gusev, S. F.; Koryakovskiy, O. A.; and Sidyakin,

V. A.

19750485

AA0040779



1D

2/2

19750486

1/2 008 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--TWO PYRIDYLAZONAPHTHOL ISOMERS AND THEIR REACTION WITH COPPER IONS
-U-

AUTHOR--GUSEV, S.I., GLUSHKOVA, I.N., KETOVA, L.A., PESIS, A.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 260-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PYRIDINE, AZO COMPOUND, NAPHTHOL, COPPER COMPLEX, EQUILIBRIUM
CONSTANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1987/1687

STEP NO--UR/0075/70/025/002/0260/0266

CIRC ACCESSION NO--AP0104902

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--11SEP70
 CIRC ACCESSION NO--AP0104902
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MIXT. OF
 2, (2, PYRIDYL AZO), 1, NAPHTHOL (I) AND 4, (2, PYRIDYL AZO), 1, NAPHTHOL (II) WAS
 OBTAINED. NA 2, PYRIDYL AZOTATE (17 G) IN 75 ML ETOH WITH 17.3 G NAPHTHOL
 WAS TREATED WITH CO SUB2 UNTIL A THICK PASTE IS FORMED TO GIVE I AND II
 BY FRACTIONAL CRYSTN. I HAS LAMBDA 360, 470 MMU; II HAS LAMBDA 450 MMU.
 PK SUBNH AND PK SUBOH OF I AND II WERE 1.05 PLUS OR MINUS 0.13 AND
 11.11 PLUS OR MINUS 0.16 AND 1.57 PLUS OR MINUS 0.16 AND 10.45 PLUS OR
 MINUS 0.49, RESP. I FORMS WITH CU 1:1 AND 1:2 COMPLEXES, DEPENDING ON
 THE PH AND THE REAGENT RATIO. WITH EXCESS REAGENT THE COMPLEXES HAVE
 LAMBDA 570 MMU AT PH 1-3 AND LAMBDA 560 MMU AT PH 5-6. WITH CU IONS
 EXCESS LAMBDA IS 570 MMU. THE 1:1 COMPLEX CAN BE EXTD. WITH BUOH, THE
 1:2 COMPLEX WITH CCL SUB4. MOLAR ABSORPTIVITY OF THE COMPLEXES, THEIR
 INSTABILITY CONSTS., AND REACTION EQUIL. CONSTS. FOR THE CU-I (PH 1-3)
 COMPLEX, THE CU-I (PH 5-6) AND THE CU-II COMPLEX WERE AS FOLLOWS:
 (2.447 TIMES 10 PRIME4, (2.87 PLUS OR MINUS 0.46) TIMES 10 PRIME
 NEGATIVE6, (1.18 PLUS OR MINUS 0.02) TIMES 10 PRIME NEGATIVE4; 4.745
 TIMES 10 PRIME4, (7.61 PLUS OR MINUS 0.99) TIMES 10 PRIME NEGATIVE7,
 (6.45 PLUS OR MINUS 0.29) TIMES 10 PRIME NEGATIVE4; 3.95 TIMES 10
 PRIME4, (2.70 PLUS OR MINUS 0.02) TIMES 10 PRIME NEGATIVE5, (6.79 PLUS
 OR MINUS 0.07) TIMES 10 PRIME NEGATIVE4.

1/2 036 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--IMPROVING THE CORROSION RESISTANCE OF SILVER COATINGS BY DECREASING
POROSITY -U-
AUTHOR--(U2)-GUSEV, S.N., SHULPIN, G.P. 6

COUNTRY OF INFO--USSR

SOURCE--KIEV, TEKHNOLGGIYA I ORGANIZATSIYA PROIZVOODSTVA, NO 1, 1970, PP
70-73
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SILVER, METAL COATING, CORROSION RESISTANCE, HYDROGEN, GAS
ABSORPTION, POROUS METAL, ULTRASONIC CLEANING, ELECTRODEPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1332

STEP NO--UR/0418/70/000/001/0070/0073

CIRC ACCESSION NO--W0123290

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123240

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPLEX STATISTICAL STUDY WAS MADE IN ORDER TO EXPLAIN THE EFFECTS OF TECHNOLOGICAL AND DESIGN FACTORS ON POROSITY AND CORROSION RESISTANCE. IT WAS SHOWN THAT THE PRIMARY REASON FOR POROSITY OF SILVER COATINGS IS IN THE ADSORPTION OF HYDROGEN BUBBLES RELEASED DURING JOINT DISCHARGE WITH SILVER. THE COMBINED USE OF THE TECHNOLOGICAL AND DESIGN MEANS FOR DECREASING POROSITY CAN RAISE RESISTANCE TO CORROSION 5-7 TIMES. THE MOST EFFECTIVE WAY OF DECREASING POROSITY IS BY STABILIZING TANK CURRENT AND USING ULTRASONIC WASHING. THE EDGE EFFECT MUST ALSO BE CONSIDERED.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--INFRARED SPECTRA OF COPPER SELENITES -U-
AUTHOR--(04)-MAKATUN, V.N., PECHKOVSKIY, V.V., MELNIKOVA, R.YA., GUSEV,
S.S.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(3), 497-503
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--COPPER COMPOUND, SELENIUM COMPOUND, OXYGEN COMPOUND,
CRYSTALLOGRAPHY, IR SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY PEEL/FRAE--1997/0330 STEP NO--08/0368/70/012/003/0497/0503
CIRC ACCESSION NO--A0011911/
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119317

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STATE OF H SUB2 O IN CRYST. CU
SELENITE HYDRATES, AND THE CHANGES OF THE SPECTRAL CHARACTERISTICS OF
SE0 SUB3 PRIME2 NEGATIVE ION BOUND TO ONLY ONE CATION WERE STUDIED AS A
FUNCTION OF THE CHANGE OF CRYSTALLOGRAPHIC PARAMETERS. THE PREPN. OF
CUSE0 SUB3.2H SUB2 O, CUSE0 SUB3.2D SUB2 O, CRYST. CUSE0 SUB3, AMORPHOUS
CUSE0 SUB3, CUO.CUSE0 SUB3, AND CUO. 2SE0 SUB3 IS DESCRIBED IN GREAT
DETAIL. THE IR SPECTRA WERE OBTAINED BETWEEN 400 AND 4000 CM PRIME
NEGATIVE1.

UNCLASSIFIED

1/2 034 UNCLASSIFIED PROCESSING DATE--230CT70
TITLE--FORMATION OF CHARGED AND EXCITED PARTICLES IN COLLISIONS BETWEEN
NOBLE GAS IONS OR ATOMS AND HYDROGEN MOLECULES -U-
AUTHOR--(05)-POLYAKOVA, G.N., GUSEV, V.A., YERKA, V.F., FOGEL, YA.M., ZATS,
A.V.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 4, PP 1186-1196
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--EXCITATION CROSS SECTION, PARTICLE COLLISION, GAS IONIZATION,
HYDROGEN, EMISSION SPECTRUM, INERT GAS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1485

STEP NO--UR/0056/70/058/004/1186/1196

CIRC ACCESSION NO--AP0106241

UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--25OCT70

CIRC ACCESSION NO--AP0106241

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTIVE CROSS SECTIONS FOR H SUB2 PRIME POSITIVE AND H PRIME POSITIVE PRODUCTION IN COLLISIONS BETWEEN 3-40KEV HE, NE AND AR IONS OR ATOMS AND H SUB2 MOLECULES ARE MEASURED BY THE MASS SPECTROMETER TECHNIQUE. THE EFFECTIVE CROSS SECTIONS FOR THE H SUBALPHA AND H SUBBETA EXCITED LINES OF THE BALMER HYDROGEN SERIES AND FOR SOME SPECTRAL LINES OF HE, NE AND AR ATOMS AND IONS ARISING IN COLLISIONS BETWEEN 0.1-30 KEV ATOMS AND IONS OF THE SAME NOBLE GASES AND H SUB2 MOLECULES ARE MEASURED BY THE MASS SPECTROSCOPIC TECHNIQUE. THE RESULTS OF THE MEASUREMENTS SHOW THAT MANY SIGMA (UPSILON) CURVES (SIGMA IS THE EFFECTIVE CROSS SECTION FOR A CERTAIN COLLISION PROCESS AND UPSILON IS THE RELATIVE VELOCITY OF THE COLLIDING PARTICLES) EXHIBIT PEAKS IN THE REGION OF SMALL IMPINGING PARTICLE ENERGIES. THE PEAKS CANNOT BE EXPLAINED ON THE BASIS OF THE MASSEY ADIABATIC CONDITION. POSSIBLE CAUSES OF THE PEAKS ARE DISCUSSED.

FACILITY: FIZIKO-TEKHNICHESKIY INSTITUT AN UKRAINSKOY SSR.

USSR

GUSEV, V. A., ONSYUK, A.A., FOGEL', Ya. M., PILIPENKO, D. V., Physico-technical Institute, Academy of Sciences, Ukrainian SSR

"The Formation of Slow Atomic Negative Oxygen Ions in Collisions Between Fast Protons or Hydrogen Atoms and O₂ Molecules"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, No 12, 1970, pp 1909-1916

Abstract: A method is developed for the investigation of processes involving the formation of negative ions in collisions between fast ions or atoms with gas molecules. The effective cross sections of the formation of O⁻ ions in collisions between 3-50 kev hydrogen ions or atoms and oxygen molecules are measured in terms of relative units. 4 figures, 16 bibliographic entries.

1/1

UDC 621.382.3

USSR

FEDOTOV, YA. A., SIDOROV, V.G., GUSEV, V.A., VASIL'YEV, A.P., REMIZOVA, G.V.

"Definition Of The Determinant Factors During Physico-Mathematical Investigation Of The Quality Of Alloy-Type Low-Power Transistors"

Elektron. tekhnika. Nauchno-tekhn. sb. Poluprovodn. pribory (Electronic Technology. Scientific-Technical Collection. Semiconductor Devices), 1970, No 1(51), pp 3-24
(from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B176)

Translation: A method is proposed for analysis of the quality of alloy-type low-power transistors with the aid of physico-mathematical methods which define the determinate factors effecting the change of the individual parameters. Author's Summary.

1/1

- 89 -

USSR

GUSEV, V. A.; OKSMUK, A. A.; POSEL', Ya. M. (Physicotechnical Institute, Ukrainian Academy of Sciences)

"Dissociation of Diatomic Molecules Into Ions by Impact of Fast Ions and Atoms"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki; April 1978, pp 1284-90

Abstract: The mass-spectrometer technique is employed for measuring the relative effective cross sections for formation of slow atomic negative ions produced in collisions between fast ions and atoms of hydrogen, helium, neon, argon, and krypton (3-50 keV energy) and O_2 , CO and NO molecules. The difference observed between the functions $\sigma_{\text{eff}}^{-+}(v)$ and $\sigma_{\text{eff}}^{-0}(v)$ is ascribed to the contribution to the measured cross section of processes involving dissociative electron capture by the target molecules. Some considerations regarding the mechanism of diatomic molecule dissociation into positive and negative ions are presented.

1/1

0138

UFG 601.312.46.1

GUREV, V. A. et al. UDSSR, 1981, Vol. 14, No. 10, p. 1041-1045.

"A Laser Modulator on a Frequency of 1.5 GHz With Low Control Power"

Moscow, Radiotekhnika i Elektronika, Vol. 26, No. 10, 1981, p. 1041-1045.

Abstract: The article is a report on a microwave laser modulator with a toroidal resonator cavity. A modulator with extremely low controlled power can be made by utilizing the extremely high electric field concentration in a capacitive gap in the toroidal resonator cavity. Experiments with X-cut and Y-cut LiNbO₃ crystals were studied. The light source was a helium-neon laser. The parameters of the modulator with X-cut crystals are much superior to those for the Y-cut. However, the X-cut crystal is a natural birefringent crystal, which is extremely dependent on its temperature. For normal operation of the modulator, the temperature should be stabilized within 0.01°C. The figure, bibliography of three titles.

1/1

USSR

UDC 621.383.53:535.232.6

GUSEV, V.A., NOVOZHENYUK, I.I.

"~~To a~~ Theory of Silicon Phototransistors"

Poluprovodn. tekhn. i mikroelektronika. Resp. mezhd. sb. (Semiconductor Technology And Microelectronics. Republic Interdepartmental Collection), 1970, No 4, pp 96-101 (From RZh--Elektronika i yeye primeneniye, No 8, August 1970, Abstract No 83225)

Translation: A theoretical analysis is presented of the operating mechanism of a silicon phototransistor. Expressions are obtained for the current-voltage characteristics in the dark and with the action of radiation for cases when the generation mechanism for conductivity and the surface loss (channel conductivity) are predominant in the central junction. It follows from the expressions obtained that the basic parameters of the phototransistor depend on the intensity of radiation, during which the sharpest change of turn-on voltage is observed during an absence of avalanche multiplication in the central junction. It is shown that phototransistors, the switching mechanism of which is determined by production of charge carriers at the central junction, have the best sensitivity during switching; however, devices with avalanche multiplication have the best freedom from interference. 2 ill. 11 ref. N.L.

USSR

UDC 539.3:534.1

GUSEV, V. B., KONEVALOV, V. S., NIKIFOROV, A. S.

"On the Dissipative Properties of a Plate Partially Faced With Vibration Absorbing Material"

V sb. Rasseyaniye energii pri kolebaniyakh mekh. sistem (Energy Scattering in the Vibrations of Mechanical Systems -- Collection of Works), Kiev, "Nauk. dumka", 1972, pp 248-250 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V233)

Translation: The dissipative properties of a plate upon the deposition of a vibration absorbing material on a portion of its surface are investigated. The dissipative properties of a rod of finite length, a certain part of which is coated with the vibration absorbing material, are initially considered to make a qualitative evaluation of these properties. Two cases are considered, in one of which the material is applied to the middle portion of the rod symmetric with its center, and in the other the material is applied at the ends of the rod. The experimental portion was conducted on circular plates of diameter 100 cm. Rubber was used as a vibration absorbing coating.

1/2

USSR

GUSEV, V. B., et al, Rasseyaniye energii pri kolebaniyakh mekh. sistem, Kiev, "Nauk. dumka", 1972, pp 248-250

The coefficient of losses in the plate was measured under constant removal of the rubber from the surface of the plate. Measurements of the coefficient of loss were conducted by a reverberation method up to a 10-fold decrease in the amplitude of the free bending oscillations of the plate. It is pointed out that the dissipative properties of the plate at high frequencies are practically independent of the placement on it of one or another quantity (with respect to area) of vibration absorbing material. It is more reasonable to place the vibration absorbing material closer to the center of the plate to ensure the best dissipative properties of the plate at low frequencies. Yu. A. Belyayev.

2/2

- 71 -

Brubakov, M. L., Zablita, G. A.	Reception of Optical Radiation Energy Modulated by a Superhigh-Frequency Signal	300
Popov, L. N.	Parametric Optical Signal Isolator	304
Gusev, V. G.	Study of the Effect of Multilayer Laser Emission on the Reception of Phase Modulated Signals...	311
Korshunov, I. P.	Study of the Basic Parameters of Long-Distance Communications Lines	320
Gertsenshteyn, F. E.	Gas Lenses for Optical Beam Wave Guides	323
Maykapar, O. I.	Structural Characteristics of Antennas for Photon Information Transmission Systems	331
Khromov, A. B., Fab- rikov, V. A., Klyukin, L. N.	Temperature Conditions of Thin Ferroelectric Films when Recording Images by Laser Emission	340
Klyukin, L. N., Fabelkov, V. A., Khromov, A. B.	Thin Magnetic Films in Laser Beam Information Transmission Systems	350
Men'shikh, O. F.	Method of Precision Diagnosis of Small Disturbances of the Optical Activity and Media using Laser Radiation	364
Men'shikh, O. F.	Procedure for Optical Differentiation of Ampli- tude Modulated Coherent Radiation	371
Hikittin, V. V., Samoylov, V. D.	Study of the Optical Properties of Substances Based on the Inverse Faraday Effect	375
Uspekinkiy, A. V.	Study of Logical Elements Based on a Ferrocon- ductor Laser Photodiode	380
Dezyukin, I. A., Kotov, V. V., Mozorenko, Yu. L.	Possibility of Realizing Three Stable States in a Semiconductor Layer with Nonuniform Prol- lution	385
Dezyukin, I. A., Kotov, V. V., Mozorenko, Yu. L.	Two-Dimensional Scanning of an Optical Beam by Light Refraction in an Ultrasonic Field ...	389
Dezyukin, I. A., Kotov, V. V., Mozorenko, Yu. L.	Laser System Imaging that an Image of an Object will be Obtained on a Display Screen ..	395

TECHNICAL TRANSLATION

Doc / ESTCALT 23-2015-72
17 Dec 86
ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV,
SEPTEMBER 1963

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AUTHOR: I. A. DERJUGIN, ET AL.

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INRENT T.G. SCHEVCHENKO

Translated for FSTC by ACSL

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- 1/11/86 Page -

GUSEV V. G.

Fomchenkov, V. M., Shadrin, O. A.	Application of the Type-12 Photocathode for Ultrasonic Scanning of a Laser Beam	402
Vanestian, N. A., Lebedeva, L. N., Sadykin, N. I.	Rotation of the Locus of the Reflection Pattern of Coherent Light on Rotation of the Reflecting Surface	408
Azen'yan, T. I.	Study of the Statistical Properties of Varia- tions of the Laser Field Intensity on Propagation on a Ground Route	416
Azen'yan, T. I., Semenov, A. A.	Analysis of Random Variations of the Laser Field Intensity in the High-Frequency Part of the Spectrum During Propagation in the Troposphere ..	420
Gusev, V. G., Vorobeychikov	Study of the Passage of Phase Modulated and Amplitude Modulated Optical Band Signals Through the Atmosphere	425
Milyutin, Ye. P., Lobkova, L. N., Litvinova, T. P., Chistyakov, A. B.	Experimental Study of Laser Beam Propagation in the Atmosphere	429
Lobkova, L. N.	Power Fluctuations of Laser Radiation Caused by a Turbulent Atmosphere	435
Vlasov, G. I., Levin, I. N.	Laser Beam Videoinformation Transmission Range in an Anisotropic Medium	443
Gonin, V. N., Kabanov, N. V.	Spatial and Time Characteristics of Atmospheric Noise in the Visible Range of the Spectrum ...	447
Vaytsel, V. I., Khmel'evskiy, S. S.	Holographic Recording Through Random Media ...	453
Senkevich, B. V., Lysakov, Ye. I., Osipov, Yu. N.	Frequency Stabilization of Laser Emission by the Active Method with the Application of an Auxiliary Heterodyne	463
Yegorov, Yu. P., Petrov, A. S.	Experimental Measurement of the Natural Modu- lation Line Width of a Gas Laser with Coupled Types of Oscillations	465
Sagatov, E. A., Nazarov, A. U.	Correlation Analysis of the Laser Emission Emission	471
Sagatov, E. A., Nazarov, A. U.	Laser Noise During Operation of a Local Quantum Amplifier	479

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- 1/111 Page -